



Encouraging Storage Excellence or Garth gets a soapbox opportunity

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How to DIScourage storage excellence

Storage systems is a young community, traditionally fragmented

- Storage systems is taught and research is published as a small part of operating systems, computer architecture, fault tolerance, database, performance analysis, magnetics, ...
 - There is no community fully tracking storage systems knowledge

Education

- No required undergrad courses (20ish lectures) or textbooks
 - Students don't see storage systems as a first class category

Research

- No tradition of “storage systems” as peer to OS, Arch, DB ...
 - Promotion cmts don't see storage systems as a first class discipline

Each program/expert arrives at need to study storage systems as a result of personal experiences

- This is slow. It works against recruiting the best. Its too hard.

Virtuous/Vicious Cycle

Importance/Lack of

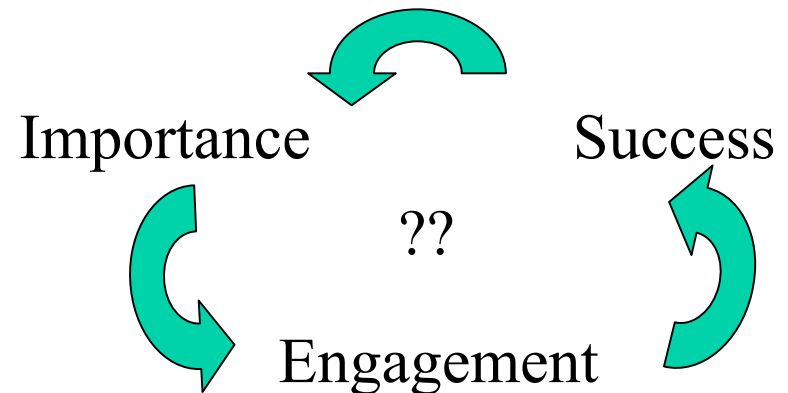
- To science,
to commerce,
to society

Engagement/ Lack of

- Fundin & startups,
courses & MS programs,
textbooks

Success/Lack of

- Front & business page articles,
astonishing science,
academic awards & programs,
Nova episodes



What is in a name?

Storage systems/FS
Distributed storage/FS
HEC storage/FS
Massive storage/FS (archive)
Large scale storage/FS
Google FS!!

Seeking the Virtuous Cycle

Build the right community

- Include other large scale storage: internet services, distributed FS
- Advance FAST, ACM Trans of Storage quality

Recognize the community accomplishments

- Scientific American articles, NOVA programs, IEEE RJB Information Storage award, Scxy success stories

Create new opportunities for success

- Grand challenges: 1 TB/s; 1 trillion file walk, grep “ACT” <genome>

Exploit opportunities

- National importance of technical competitiveness, trained scientists

Reach out

- K-12 “awesome” roadshows; public materials for courses/programs

And now for some real info:

Carnegie Mellon Univ. -- Greg Ganger

Univ. of Wisconsin -- Remzi Arpaci-Dusseau

Univ. of Minnesota -- David Du

Univ. of California, Santa Cruz -- Scott Brandt